

ABSTRACT**INCREASED PRECISION POSITION SENSORS**

5 An increased precision position sensor comprises a first magnetic field sensing device; a second magnetic field sensing device; and a processor, the processor further comprising a calibrator; a mathematical model to predict the magnetic field at a given position relative to the object; and an estimator algorithm to compare the measured magnetic field within the predicted magnetic field, thereby calculating the most likely position of the position sensor relative to the magnetic object.

10 A position sensor in accordance with the invention is capable of locating the axis of a cylindrical magnetic object to within ± 0.5 mm through 70 mm thick aluminium, and is expected to find application, in the aerospace industry, or other industries where high precision during manufacture is required. The invention may be conveniently embodied in a portable, handheld device.

15 (Figure 3)